A low complexity joint equalizer and decoder for 1000Base-T Gi Ethernet

Haratsch, E.F. Azadet, K.
DSP & VLSI Syst. Res., Lucent Technol. Bell Labs., Holmdel, NJ, USA;

This paper appears in: Custom Integrated Circuits Conference, 2000. CICC. Proceedings of th 2000
Publication Date: 21-24 May 2000
On page(s): 465 - 468
Number of Pages: 596
Meeting Date: 05/21/2000 - 05/24/2000
Location: Orlando, FL
INSPEC Accession Number:6715415
Digital Object Identifier: 10.1109/CICC.2000.852709
Posted online: 2002-08-06 23:13:51.0

Abstract
A VLSI architecture for low complexity joint decoding and equalization for 1000Base-T Gigabit Ethe presented. A one-tap parallel decision-feedback decoder jointly decodes the trellis and cancels the the first tap of the post-cursor channel impulse response. The one-dimensional branch metrics are precomputed in a look-ahead fashion to meet the speed requirements. The less significant tail of th impulse response is canceled with a simple decision-feedback prefilter. The design has been imple 3.3 V, 0.25 μm standard cell CMOS process for operation at 125 MHz

Index Terms
Inspec
Controlled Indexing
CMOS digital integrated circuits VLSI application specific integrated circuits decision feedback equalisers decoding digital signal processing chips high-speed integrated circuits interference suppression intersymbol interference local area networks trellis coded modulation

Non-controlled Indexing
0.25 micron 1000Base-T Gigabit Ethernet 125 MHz 3.3 V ISI cancellation TCM signa VLSI architecture decision-feedback prefilter decoding equalization low complexity join equalizer/decoder one-dimensional branch metrics one-tap parallel decision-feedback decoder post-cursor channel impulse response standard cell CMOS process trellis code

Author Keywords
Not Available

References

No references available on IEEE Xplore.

Citing Documents

1 A 1-Gb/s joint equalizer and trellis decoder for 1000BASE-T Gigabit Ethernet, Karatsch, E.F.; A *Solid-State Circuits, IEEE Journal of*
On page(s): 374-384, Volume: 36, Issue: 3, Mar 2001
Abstract | Full Text: PDF (228)